

**PUBLIC UTILITIES COMMISSION**

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



December 30, 2002

Agenda ID #1558

TO: PARTIES OF RECORD IN INVESTIGATION 98-12-013

This is the draft decision of Commissioner Carl Wood. It will not appear on the Commission's agenda for at least 30 days after the date it is mailed. The Commission may act then, or it may postpone action until later.

When the Commission acts on the draft decision, it may adopt all or part of it as written, amend or modify it, or set it aside and prepare its own decision. Only when the Commission acts does the decision become binding on the parties.

Parties to the proceeding may file comments on the draft decision as provided in Article 19 of the Commission's "Rules of Practice and Procedure." These rules are accessible on the Commission's website at <http://www.cpuc.ca.gov>. Pursuant to Rule 77.3 opening comments shall not exceed 15 pages. Finally, comments must be served separately on the ALJ and the assigned Commissioner, and for that purpose I suggest hand delivery, overnight mail, or other expeditious method of service.

/s/ CAROL BROWN

Carol Brown, Interim Chief  
Administrative Law Judge

CAB:sid

Attachment

Decision **DRAFT DECISION OF COMMISSIONER WOOD**  
**(Mailed 12/30/2002)****BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Order Instituting Investigation Into the Power  
Outage Which Occurred on December 8, 1998 on  
Pacific Gas & Electric System.

Investigation 98-12-013  
(Filed December 17, 1998)

**OPINION CLOSING INVESTIGATION AND  
ADOPTING REPORTING REQUIREMENT****I. Summary**

This investigation addresses the Pacific Gas and Electric Company (PG&E) power outage that occurred on December 8, 1998 in San Francisco. The outage left 456,000 customers in San Francisco and San Mateo Counties without power. The intent of our investigation was to discover the root causes of the outage and to identify and implement measures to prevent future outages, and thereby to promote the public welfare. We have developed a substantial record through the submission of reports by the parties, and extensive workshops. These have culminated in a report (Joint Report) by PG&E, the Commission's Consumer Protection and Safety Division (CPSD),<sup>1</sup> and the City and County of San Francisco (CCSF). The Joint Report recommends a series of reporting requirements designed to monitor outages, and PG&E's progress toward

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<sup>1</sup> Formerly known as the Consumer Services Division.

implementing various measures designed to enhance system reliability. In this opinion, we adopt the reporting requirements, and close the proceeding.

## **II. Procedural Background**

On December 17, 1998, the Commission initiated this proceeding in order to investigate the major power outage that occurred in San Francisco on December 8, 1998. On January 25, 1999, PG&E filed its report on the outage. In March and April 1999, the California Independent System Operator (CAISO), CPSD, the Commission's Office of Ratepayer Advocates (ORA), CCSF, San Diego Gas and Electric Company (SDG&E), Southern California Edison Company (SCE), and The Utility Reform Network (TURN) filed their responsive reports on the outage. Since that time, the parties have participated in numerous meetings and workshops addressing issues raised in this proceeding. On May 30, 2002, PG&E, CCSF and CPSD filed the Joint Report that provides their recommendations on the conditions necessary for closing this proceeding. No party filed any opposition to the Joint Report.

## **III. Outage Summary**

On December 8, 1998, PG&E lost power on all of its 115 kilovolt (kV) transmission lines from the San Mateo Substation to San Francisco, and the two San Francisco power plants went off line, leaving more than 456,000 customers without power. Only the approximately 13,000 customers served from the 230 kV transmission line from the San Mateo Substation continued to receive power. Six hours later, PG&E had restored service to all but 27,000 customers. Within the next two hours, all customers had power.

PG&E's report describes two events that it contends precipitated the outage:

- “A PG&E transmission construction crew working on the #2 115 kV bus, Section D at the San Mateo Substation failed to remove protective grounds that had been installed as a safety measure while the crew was working on the bus section.
- “Before energizing the bus section at the conclusion of this construction work, a PG&E transmission substation operator failed to engage the protective relays that signal the circuit breaker to open when there is a fault on the bus.”<sup>2</sup>

PG&E maintains that, had either of these failures not occurred, there would have been no outage.

When the bus was energized with the grounds still in place, a three-phase to ground fault occurred and the protective relays did not open (trip) the circuit breaker. Had the protective relays been engaged, the circuit breaker would have tripped, stopping (clearing) the fault within about one-tenth of a second and confining the effects of the fault to a single bus in the substation with no resulting outage. Instead, more distant circuit breakers and circuit breakers on the #1 115 kV bus, Section D, tripped, as designed, approximately one-half second later. As a consequence of the delayed clearing of the fault, the 115 kV transmission line voltages dropped significantly during the fault and the transmission system into San Francisco experienced large power fluctuations after the fault cleared.

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<sup>2</sup> December 8, 1998 Outage Investigation Report, PG&E, January 25, 1999, p. 1.

The resulting system instability caused San Francisco generation and other transmission circuit breakers to trip. About 11 seconds after the incident began, power was lost on all of the 115 kV lines serving San Francisco, and the two San Francisco power plants had tripped off line. This left more than 456,000 customers without power.

#### **IV. Joint Report**

The Joint Report resolves several issues that we outline below.

##### **A. San Francisco Recovery Plan**

PG&E has installed a sophisticated software system, known as the “AIA system,” that quickly establishes a plan for restoring load using real-time inputs on the status and availability of equipment.<sup>3</sup> CCSF supports this system. CCSF and CPSD request that PG&E report periodically on the performance of the system. As a result, PG&E agrees to provide a quarterly report on the progress of the implementation and use of this system.

##### **B. San Francisco Remedial Action Scheme (RAS)**

PG&E is proceeding with the installation of the RAS that will operate during extreme contingencies to keep the transmission system intact and allow more load to be served. PG&E asserted during the workshops that the RAS would help to reduce the impact of the type of outage that occurred in December 1998. PG&E subsequently said the RAS would be completed by June 2001, and now believes that it will be completed by July 2003. CCSF urges that its installation be completed as quickly as possible. PG&E asserts that it is

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<sup>3</sup> AIA is the name of the company that makes the software system.

committed to installing the RAS as expeditiously as possible. It believes that the RAS complements its San Francisco Recovery Plan as well as reliability improvements that have taken place over the past few years. PG&E will provide quarterly progress reports on RAS installation.

### **C. Action Plan Report**

CPSD and CCSF request that PG&E continue to report on its progress in implementing the agreed-upon actions resulting from the investigation into the December 8 outage and the workshops. The Action Plan Report, included as Attachment B to this decision, includes those activities that are still pending. PG&E will report on those activities until they are completed.

### **D. Outage Reports**

CPSD and CCSF request that PG&E provide outage information since December 8, 1998. Specifically, CPSD and CCSF request that PG&E provide reliability information specific to San Francisco, as well as system-wide, in the form of SAIDI and SAIFI statistics,<sup>4</sup> and detailed information concerning outages that have occurred since December 8, 1998. PG&E agrees to provide quarterly reports on its reliability performance in the form of SAIDI and SAIFI statistics for both San Francisco and system-wide to CPSD, and SAIDI and SAIFI statistics for San Francisco to CCSF. PG&E will also provide CPSD with detailed electronic data containing information related to distribution outages that occurred from January 1, 1999 to the present. PG&E will provide this same electronic data to CCSF, but limited to San Francisco outages. In addition, PG&E will provide this

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<sup>4</sup> SAIDI means “System Average Interruption Duration Index;” SAIFI means “System Average Interruption Frequency Index.”

same distribution outage data to CPSD and CCSF (for San Francisco only) on a quarterly basis, until the reporting requirement is terminated. Quarterly data will be supplied three months after the fact to allow PG&E's outage review teams time to investigate and correct any errors in the data. The detailed outage information will be provided to CPSD under Public Utilities Code Section 583 (Section 583), and to CCSF pursuant to a non-disclosure agreement.

#### **E. Root Cause Reports**

CPSD requests that PG&E provide its root cause reports related to outages on its entire system, while CCSF requests them for San Francisco. PG&E explains that the outages on its distribution system are reviewed locally by its 18 divisions. In each division, an outage review team meets periodically to review distribution outages, decide if further investigation into the cause of the outage is necessary, and determine what, if any, corrective action should be implemented to mitigate future outages. PG&E will provide to CPSD, on a quarterly basis, distribution outage reports resulting from these outage review team meetings that specify action being taken and work completed. PG&E will also provide CPSD with event reports that are created subsequent to primarily transmission events. All of these reports will be submitted to CPSD under Section 583. In addition, PG&E will provide to CCSF, on a quarterly basis, distribution outage reports pertaining to San Francisco, pursuant to a non-disclosure agreement.

#### **F. Maintenance Reporting**

Pursuant to CPSD and CCSF's request, PG&E will provide quarterly reports on its Maintenance Repair and Replace Outages statistics for its entire system as well as for San Francisco. In addition, PG&E will provide a copy of the

annual letter from the CAISO that discusses the CAISO's maintenance audit of PG&E's transmission system.

### **G. Audit Reports**

CPSD requests that PG&E provide information regarding its workplace audit activities. As a result, PG&E will provide copies of the checklists that PG&E's auditors use to audit its substations and control centers, plus summary reports showing how each location performed. PG&E will submit these reports pursuant to Section 583.

### **H. Occupational Health and Safety (OSHA) Reporting**

CPSD requests that PG&E keep its OSHA reporting information available upon request. PG&E agrees to do so.

### **I. Sunset Provision**

The parties agree that the foregoing reporting requirements should sunset three years after the effective date of a decision in this proceeding. However, the parties have not reached agreement on the procedural mechanism for revisiting the reporting requirements at the conclusion of the three-year sunset period.

CPSD recommends that PG&E be required to provide notice and seek to meet and confer with the other parties at the conclusion of the sunset period. It could then file an advice letter stating its intent to alter or terminate this reporting requirement. Other parties could protest the advice letter or permit the requirements to expire without protest. CCSF supports this recommendation.

PG&E recommends that if CPSD or CCSF wish to continue the reporting requirements, either party should notify it in writing prior to the sunset date. The parties should meet and confer to discuss continuation or



modifications to the reporting requirements. If parties cannot reach agreement, parties may file a petition for modification with the Commission seeking an extension of the reporting requirements.

#### **J. Distribution of Reports**

PG&E will provide the reports associated with paragraphs A, B, and C above to CCSF, CPSD, and the Commission's Energy Division (Energy Division). PG&E will provide the reports associated with paragraphs D and E above to CPSD and Energy Division, and to CCSF pursuant to a non-disclosure agreement, as indicated above. PG&E will provide the reports associated with paragraphs F and G to CPSD, and Energy Division.

#### **K. Public Utilities Code Section 583 Clarification**

CPSD does not oppose PG&E's desire to submit these reports under Section 583. CPSD and PG&E agree to abide by the Section 583 requirement that prevents disclosure of such materials except on order of the Commission, or by order or ruling of the Commission or a commissioner in the course of a hearing or proceeding.

#### **V. Discussion**

This proceeding has developed a substantial amount of information about the December 1998 outage. The parties have participated in workshops and discussions, and have monitored PG&E's actions to correct the problems identified in the investigation. These activities have led to the Joint Report for resolving this proceeding. The Joint Report provides for various reports that will improve our ability to monitor PG&E's system reliability, and its efforts toward improvement, especially in San Francisco.

In the Joint Report, CCSF expressed concern over the San Francisco Operating Criteria and Planning Criteria. CCSF originally recommended a comprehensive review of the assumptions underlying the San Francisco Operating Criteria and Planning Criteria in a separate proceeding. The Commission raised similar concerns in D.99-09-028. While we believe that the San Francisco Operating Criteria and Planning Criteria are important matters we will not initiate a proceeding to consider them at this time. If our monitoring indicates the need for a comprehensive review, we will do so in the future as our resources permit.

An additional matter is the sunset provision. Given the importance of system reliability, and the fact that it remains to be seen whether PG&E's efforts improve reliability, we will not allow the reporting requirement to sunset automatically. Rather, we will allow PG&E to file an advice letter to do so, no sooner than three years after the effective date of this decision. That process will allow the parties to file protests, and allow the Commission to consider whether continued reporting is needed.

This order should be effective immediately so that the reporting requirements can be implemented as soon as possible.

## **VI. Category and Need for Hearings**

In our Order instituting this investigation, we preliminarily categorized this proceeding as quasi-legislative, and determined that hearings would be necessary. In D.99-09-028, we confirmed that this is a quasi-legislative proceeding. No hearings have been held, and we now determine that none are necessary.

**VII. Comments on the Draft Decision**

On December 30, 2002, the draft decision was filed with the Commission and served on the parties in accordance with Section 311(g)(1) of the Public Utilities Code and Rule 77.7 of the Commission's Rules of Practice and Procedure.

**VIII. Assignment of Proceeding**

Carl Wood is the Assigned Commissioner and Jeffrey O'Donnell is the assigned Administrative Law Judge in this proceeding.

**Findings of Fact**

1. The Joint Report provides for various reports that will facilitate monitoring of PG&E's progress in improving the reliability of its system.
2. Given the importance of system reliability, and the fact that it remains to be seen whether PG&E's efforts improve reliability, the reporting requirement should not sunset automatically.
3. If our monitoring indicates the need for a comprehensive review of the San Francisco Operating Criteria and Planning Criteria, we will do so in the future as our resources permit.
4. No hearings are necessary.

**Conclusions of Law**

1. Adoption of the reporting requirements included in the Joint Report is in the public interest.
2. It is reasonable to allow PG&E to file an advice letter to discontinue the reporting requirements in the Joint Report, no sooner than three years after the effective date of this decision. This will allow the parties to file protests, and the Commission can then consider whether continued reporting is needed.

3. This order should be effective immediately so that the reporting requirements can be implemented as soon as possible.

**O R D E R**

**IT IS ORDERED** that:

1. The reporting requirements specified in the Joint Report, and included herein as Attachment A, are adopted.
2. No sooner than three years after the effective date of this decision, Pacific Gas and Electric Company may file an advice letter requesting authorization to terminate the reporting requirements adopted herein.
3. This proceeding is closed.

This order is effective today.

Dated \_\_\_\_\_, at San Francisco, California.

**ATTACHMENT A****Page 1****REPORTING REQUIREMENTS**

Pursuant to the Joint Report, Pacific Gas and Electric Company (PG&E) will provide the following reports:

**1. San Francisco Recovery Plan**

PG&E will provide a quarterly report on the progress of the implementation and use of the AIA system.<sup>1</sup>

**2. San Francisco Remedial Action Scheme (RAS)**

PG&E will provide quarterly reports on the progress toward installing the RAS.

**3. Action Plan Report**

The Action Plan Report, included as Attachment B to this decision, includes those activities that are still pending. PG&E will report on those activities until they are completed.

**4. Outage Reports**

PG&E will report on a quarterly basis its reliability performance in the form of SAIDI and SAIFI statistics for both San Francisco and system-wide to the Commission's Consumer Protection and Safety Division (CPSD), and SAIDI and SAIFI statistics for San Francisco to the City and County of San Francisco (CCSF).<sup>2</sup> PG&E will also provide to CPSD its detailed electronic data containing information related to distribution outages that occurred from January 1, 1999

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<sup>1</sup> AIA is the name of the company that makes the software system.

<sup>2</sup> SAIDI means "System Average Interruption Duration Index;" SAIFI means "System Average Interruption Frequency Index."

**ATTACHMENT A****Page 2**

to the present. PG&E will provide this same electronic data to CCSF, but limited to San Francisco outages. In addition, PG&E will provide this same distribution outage data to CPSD and CCSF (for San Francisco only) on a quarterly basis. Quarterly data will be supplied three months after the fact to allow the outage review teams time to investigate, and correct any errors in the data. The detailed outage information will be provided to CPSD under Public Utilities Code Section 583 (Section 583). The detailed outage information will be provided to CCSF pursuant to a non-disclosure agreement.

**4. Root Cause Reports**

PG&E will provide to CPSD, on a quarterly basis, distribution outage reports that specify action being taken and work completed. PG&E will provide to CCSF, on a quarterly basis, distribution outage reports that specify action being taken and work completed regarding the distribution system within San Francisco. PG&E will also provide to CPSD event reports that are created subsequent to primarily transmission events. All of these reports will be submitted to CSD under Section 583. The reports pertaining to San Francisco will be provided to CCSF pursuant to a non-disclosure agreement.

**6. Maintenance Reporting**

PG&E will report on a quarterly basis its Maintenance Repair and Replace Outages statistics for both its entire system as well as San Francisco. In addition, PG&E will provide a copy of the annual letter from the California Independent System Operator that discusses its maintenance audit conducted on PG&E's transmission system.

**ATTACHMENT A****Page 3****7. Audit Reports**

PG&E will provide copies of the checklists that its auditors use to audit its substations and control centers, plus summary reports showing how each location performed. These reports will be provided pursuant to Section 583.

**8. Occupational Health and Safety (OSHA) Reporting**

PG&E will keep its OSHA reporting information available upon request.

**9. Distribution of Reports**

PG&E will provide the reports associated with paragraphs 1, 2 and 3 above to CCSF, CPSD and the Commission's Energy Division (Energy Division). PG&E will provide the reports associated with paragraphs 4 and 5 above to CPSD, and Energy Division, and to CCSF pursuant to a non-disclosure agreement. PG&E will provide the reports associated with paragraphs 6 and 7 to CPSD and Energy Division.

**(END OF ATTACHMENT A)**

**ATTACHMENT B****Action Plan**

<b><u>Paragraph</u></b>	<b><u>Action Item</u></b>	<b><u>Status</u></b>	<b><u>Start</u></b>	<b><u>Finish</u></b>
4	<b>System Reliability</b>			
4.g	<b>Initiate a feasibility and cost study for a San Francisco (SF) Remedial Action Scheme (RAS)</b>			
4.g.10	<b>SF RAS Phase I (South of San Mateo)</b>			
4.g.10.a	Finalize work scope & cost estimates	Complete	11/7/01	6/15/02
4.g.10.b	Complete the engineering design & material procurement	Complete	4/1/02	9/16/02
4.g.10.c	Place system into operation	Complete	9/17/02	10/15/02
4.g.11	<b>SF RAS Phase II (North of San Mateo)</b>			
4.g.11.a	Finalize work scope & cost estimates	In Progress	11/7/01	1/17/03
4.g.11.b	Complete the engineering design & material procurement	In Progress	4/16/02	3/1/03
4.g.11.c	Place System into operation	Open	3/2/03	7/1/03
5	<b>Maintenance Procedures</b>			
5.a	<b>Substation</b>			
5.a.13	Implement a unit cost tracking system for substation and relay maintenance activities	Complete	1/1/00	12/13/02
5.b	<b>Generation</b>			
5.b.3	Review of Emergency Operating procedures for loss of power scenario concluded there is a need for back-up air driven turning gear at Hunters Point #4	Complete	1/20/99	5/31/02

**(END OF ATTACHMENT B)**